

Claims:

1. A process for producing a readily biodegradable synthetic middle distillate, the process including:
 - (a) separating the products obtained from synthesis gas via the FT synthesis reaction into one or more heavier fraction and one or more lighter fraction;
 - (b) catalytically processing the one or more heavier fraction under conditions which yield mainly middle distillates;
 - (c) separating the middle distillate product of step (b) from the lighter product and heavier product that are also produced in step (b); and
 - (d) blending the middle distillate fraction obtained in step (c) with at least a portion of the one or more lighter fraction of step (a), or products thereof.
2. A process for producing a synthetic middle distillate as claimed in claim 1, wherein the catalytic processing of step (b) is a hydroprocessing step.
3. A process for producing a synthetic middle distillate as claimed in claim 1, wherein the catalytic processing of step (b) is a hydrocracking step.
4. A process for producing a synthetic middle distillate as claimed in claim 1, including one or more additional step of fractionating at least some of the one or more lighter fraction of step (a), or products thereof, prior to step (d).
5. A process for producing a synthetic middle distillate as claimed in claim 1, including the additional step of hydrotreating at least some of the one or more light fraction of step (a), or products thereof, prior to step (d).
6. A process for producing a synthetic middle distillate as claimed in claim 3, including the additional step of hydrotreating at least some of the one or more light fraction of step (a), or products thereof, prior to step (d).
- 25 7. A process for producing a synthetic middle distillate as claimed in claim 1, wherein the one or more heavier fraction of step (a) boils above about 270°C.
8. A process for producing a synthetic middle distillate as claimed in claim 7, wherein the one or more heavier fraction of step (a) boils above about 300°C.
9. A process for producing a synthetic middle distillate as claimed in claim 1, wherein the one or 30 more lighter fraction boils in the range C₅ to the boiling point of the heavier fraction.
10. A process for producing a synthetic middle distillate as claimed in claim 1, wherein the one or more lighter fraction boils in the range 160°C to 270°C.
11. A process for producing a synthetic middle distillate as claimed in claim 1, wherein the product of step (d) boils in the range 100°C to 400°C.
- 35 12. A process for producing a synthetic middle distillate as claimed in claim 1, wherein the product of step (d) boils in the range 160°C to 370°C.

13. A process for producing a synthetic middle distillate as claimed in claim 1, wherein the product of step (d) is a diesel fuel.
14. A process for producing a synthetic middle distillate as claimed in claim 6, wherein the product of step (d) is a diesel fuel
- 5 15. A process for producing a synthetic middle distillate as claimed in claim 1, wherein the product of step (d) is obtained by mixing the middle distillate fraction obtained in step (c) with at least a portion of the one or more lighter fraction of step (a), or products thereof, in a volume ratio selected to provide a diesel fuel having a required specification.
- 10 16. A process for producing a synthetic middle distillate as claimed in claim 15, wherein the product of step (d) is obtained by mixing the middle distillate fraction obtained in step (c) with at least a portion of the one or more lighter fraction of step (a), or products thereof, in a volume ratio of between 1:1 and 9:1.
- 15 17. A process for producing a synthetic middle distillate as claimed in claim 16, wherein the product of step (d) is obtained by mixing the middle distillate fraction obtained in step (c) with at least a portion of the one or more lighter fraction of step (a), or products thereof, in a volume ratio of between 2:1 and 6:1.
- 20 18. A process for producing a synthetic middle distillate as claimed in claim 17, wherein the product of step (d) is obtained by mixing the middle distillate fraction obtained in step (c) with at least a portion of the one or more lighter fraction of step (a), or products thereof, in a volume ratio of 84:16.